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1 [Code generation for just-in-time compiled mobile collector agents](#)

John G. Allen, Jesse S. Jin

 May 2003 **VIP '02: Selected papers from the 2002 Pan-Sydney workshop**

Volume 22

Publisher: Australian Computer Society, Inc.

Full text available: Pdf (38.50 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 13, Downloads (All Time): 1

This paper describes MGEN/x86, a toolkit that simplifies the process of code generation (JIT) compilers for the x86 series of processor. MGEN produces portable code for a user-defined sequence of instructions.

Keywords: JIT, assemble, collector, compiler, mobile, x86

2 [Dynamic optimization for efficient strong atomicity](#)

 Florian T. Schneider, Vijay Menon, Tatiana Shpeisman, Ali-Reza Adl-Tabatabaei
 October 2008 **OOPSLA '08: Proceedings of the 23rd ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**
Publisher: ACM

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Full text available: Pdf (342.68 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 196, Downloads (All Time): 1

Transactional memory (TM) is a promising concurrency control alternative to lock-based memory models. It addresses important memory model issues regarding TM semantics and exposed parallelism in safe, managed languages such as Java.

Keywords: code generation, compiler optimizations, dynamic optimization, virtual machines

Also published in:

 October 2008 **SIGPLAN Notices** Volume 43 Issue 10

3 [Secure virtual architecture: a safe execution environment for commodity operating systems](#)

John Criswell, Andrew Lenharth, Dinakar Dhurjati, Vikram Adve

 October 2007 **SOSP '07: Proceedings of twenty-first ACM SIGOPS symposium on Operating systems principles**
Publisher: ACM

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 Full text available: FLV (24:37 MIN), Pdf (383.30 KB) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 31, Downloads (12 Months): 287, Downl

This paper describes an efficient and robust approach to provide a *safe* system, such as Linux, and all its applications. The approach, which we defines ...


Keywords: compiler, memory safety, operating systems, security, type machine

Also published in:

October 2007 **SIGOPS Operating Systems Review** Volume 41 Issue 6

- 4 [Design of the Java HotSpot™ client compiler for Java 6](#)
 Thomas Kotzmann, Christian Wimmer, Hanspeter Mössenböck, Thomas Ro
 May 2008 **Transactions on Architecture and Code Optimization (T**

Publisher: ACM  [Request Permissions](#)


Full text available:  Pdf (1.14 MB)

Additional Information: [full citation](#), [abs](#)

Bibliometrics: Downloads (6 Weeks): 40, Downloads (12 Months): 433, Downl


Version 6 of Sun Microsystems' Java HotSpot™ VM ships with a redesign that includes several research results of the last years. The client compi used by default ...

Keywords: Java, compiler, deoptimization, intermediate representation register allocation

- 5 [Compiler and runtime support for efficient software transactional me](#)
 Ali-Reza Adi-Tabatabai, Brian T. Lewis, Vijay Menon, Brian R. Murphy, Brat
 June 2006 **PLDI '06: Proceedings of the 2006 ACM SIGPLAN conference**

implementation

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (211.55 KB)

Additional Information: [full citation](#), [abs](#)


Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 373, Downl

Programmers have traditionally used locks to synchronize concurrent ac synchronization, however, has well-known pitfalls: using locks for fine-gr that already uses locks are both difficult ...


Keywords: code generation, compiler optimizations, locking, synchroni machines

Also published in:


June 2006 **SIGPLAN Notices** Volume 41 Issue 6

- 6 [RPython: a step towards reconciling dynamically and statically typed](#)
 Davide Ancona, Massimo Ancona, Antonio Cuni, Nicholas D. Matsakis
 October 2007 **DLS '07: Proceedings of the 2007 symposium on Dynamic la**


Publisher: ACM

Full text available:  Pdf (239.48 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 7, Downloads (12 Months): 91, Downloads

Although the C-based interpreter of Python is reasonably fast, implementation offers some advantages in terms of robustness and interoperability. Unprimarily designed to execute ...

Keywords: .NET, JVM, Python**7** [C and tcc: a language and compiler for dynamic code generation](#)
 Massimiliano Poletto, Wilson C. Hsieh, Dawson R. Engler, M. Frans Kaashoef
March 1999 **Transactions on Programming Languages and Systems**
Publisher: ACM Full text available:  Pdf (471.68 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 18, Downloads (12 Months): 113, Downloads




Dynamic code generation allows programmers to use run-time information expressiveness superior to those of static code. The 'C(Tick C) language efficient and high-level ...

Keywords: ANSI C, compilers, dynamic code generation, dynamic code**8** [Online optimizations driven by hardware performance monitoring](#)
 Florian T. Schneider, Mathias Payer, Thomas R. Gross
June 2007 **PLDI '07: Proceedings of the 2007 ACM SIGPLAN conference on implementation**
Publisher: ACM Full text available:  Pdf (224.36 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 17, Downloads (12 Months): 122, Downloads

Hardware performance monitors provide detailed direct feedback about source of information that a compiler may use for optimization. A JIT can such information because ...

Keywords: Java, dynamic optimization, hardware performance monitoring

Also published in:


June 2007 **SIGPLAN Notices** Volume 42 Issue 6**9** [Optimistic parallelism benefits from data partitioning](#)
 Milind Kulkarni, Keshav Pingali, Ganesh Ramanarayanan, Bruce Walter, Karim
March 2008 **ASPLOS XIII: Proceedings of the 13th international conference on languages and operating systems**
Publisher: ACM Full text available:  Flv (22.0 MIN),  Pdf (356.09 KB) Additional Information: [full citation](#)**Bibliometrics:** Downloads (6 Weeks): 15, Downloads (12 Months): 223, Downloads

Recent studies of irregular applications such as finite-element mesh gen shown that these applications have a generalized data parallelism arisin perform computations on ...




Keywords: data partitioning, irregular programs, locality, lock coarseni decomposition

Also published in:

March 2008 **SIGARCH Computer Architecture News** Volume 36 Issue 1
 March 2008 **SIGPLAN Notices** Volume 43 Issue 3
 March 2008 **SIGOPS Operating Systems Review** Volume 42 Issue 2




- 10** [Code Generation and Optimization for Transactional Memory Constr](#)
 Cheng Wang, Wei-Yu Chen, Youfeng Wu, Bratin Saha, Ali-Reza Adi-Tabatab
 March 2007 **CGO '07: Proceedings of the International Symposium on Co**
Publisher: IEEE Computer Society
 Full text available:  [Pdf](#) (365.03 KB) [Additional Information: full citation, abst](#)
Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 153, Downl

Transactional memory offers significant advantages for concurrency con the design and implementation of transactional memory constructs in al languages pose a unique set of challenges ...

- 11** [Just-In-Time compilation on ARM processors](#)
 Michele Tartara, Simone Campanoni, Giovanni Agosta, Stefano Crespi Regi
 July 2009 **ICOOOLPS '09: Proceedings of the 4th workshop on the Imp**
 Object-Oriented Languages and Programming Systems
Publisher: ACM  [Request Permissions](#)
 Full text available:  [Pdf](#) (604.92 KB) [Additional Information: full citation, abst](#)
Bibliometrics: Downloads (6 Weeks): 15, Downloads (12 Months): 41, Downlo


This paper presents a Just-In-Time compilation system for ARM process starting from static compilation of the sources into CIL (Common Intern intermediate languages that are used ...

Keywords: ARM, dynamic compilation, embedded systems

- 12** [Gestural hyper instrument collaboration with generative computation](#)
 Kirsty Beilharz, Sam Ferguson
 June 2007 **C&C '07: Proceedings of the 6th ACM SIGCHI conference on**
Publisher: ACM  [Request Permissions](#)
 Full text available:  [Pdf](#) (44.02 MB) [Additional Information: full citation, abst](#)
Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 131, Downlo


This paper describes the performance, mapping, transformation and rep triggered musical creativity. These phases are articulated in an example Crossing), an audio-visually ...

Keywords: augmented performance, generative music, gestural interaction

- 13 [Tracing for web 3.0: trace compilation for the next generation web applications](#)
 Mason Chang, Edwin Smith, Rick Reitmaier, Michael Bebenita, Andreas Gai
 Franz

March 2009 **VEE '09**: Proceedings of the 2009 ACM SIGPLAN/SIGOPS international conference on virtual execution environments

Publisher: ACM 

Full text available:  Pdf (647.16 KB)


Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 53, Downloads (12 Months): 291, Downloads (Since Published): 291

Today's web applications are pushing the limits of modern web browser platform of choice for rich client-side applications has shifted the use of programs to large computationally intensive tasks


Keywords: dynamic compilation, dynamically typed languages, forth, just-in-time compilation, specialization

- 14 [Enforcing isolation and ordering in STM](#)

 Tatiana Shpeisman, Vijay Menon, Ali-Reza Adl-Tabatabai, Steven Batensiof, Katherine F. Moore, Bratin Saha

June 2007 **PLDI '07**: Proceedings of the 2007 ACM SIGPLAN conference on programming language design and implementation

Publisher: ACM 

Full text available:  Pdf (257.39 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 208, Downloads (Since Published): 208


Transactional memory provides a new concurrency control mechanism to support fine-grained synchronization. High-performance software transactional memory (STM) designs have been proposed, but they all suffer from a lack of atomicity. Accessing shared memory in a transactional manner is not atomic.

Keywords: code generation, compiler optimizations, escape analysis, hardware transactional memory, virtual machines, weak atomicity


Also published in:

June 2007 **SIGPLAN Notices** Volume 42 Issue 6

- 15 [Hardware atomicity for reliable software speculation](#)

 Naveen Neelakantam, Ravi Rajwar, Suresh Srinivas, Uma Srinivasan, Craig B. Jones
 June 2007 **ISCA '07**: Proceedings of the 34th annual international symposium on computer architecture

Publisher: ACM

Full text available:  Pdf (805.55 KB)

Additional Information: [full citation](#), [abstract](#)


Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 121, Downloads (Since Published): 121

Speculative compiler optimizations are effective in improving both single-processor performance and energy consumption, but their implementation introduces significant complexity in terms of compiler optimization scope, and hardware support.


Keywords: Java, atomicity, checkpoint, isolation, optimization, specula

Also published in:

June 2007 **SIGARCH Computer Architecture News** Volume 35 Issue 2

- 16 Design and evaluation of dynamic optimizations for a Java just-in-time
 Toshio Suganuma, Toshiaki Yasue, Motohiro Kawahito, Hideaki Komatsu, T
 July 2005 **Transactions on Programming Languages and Systems**

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (1.60 MB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 219, Downl

The high performance implementation of Java Virtual Machines (JVM) ar
 toward employing a dynamic compilation system on the basis of online
 between the compilation overhead ...

Keywords: JIT compiler, Recompilation, adaptive optimization, code sp
 directed method inlining

- 17 Revisiting Out-of-SSA Translation for Correctness, Code Quality and
 Benoit Boissinot, Alain Darté, Fabrice Bastello, Benoit Dupont de Dinechin, C
 March 2009 **CGO '09: Proceedings of the 2009 International Symposium**

Publisher: IEEE Computer Society


Full text available:  Pdf (287.20 KB)

Additional Information: [full citation](#), [abstract](#)


Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 80, Downlo

Static single assignment (SSA) form is an intermediate program repres
 can be performed with fast and easy-to-implement algorithms. However
 situations where the SSA variables ...

Keywords: SSA form, Compilers, JIT-compilation

- 18 CodeBricks: code fragments as building blocks
 Giuseppe Attardi, Antonio Cisternino, Andrew Kennedy
 June 2003 **PEPM '03: Proceedings of the 2003 ACM SIGPLAN workshop**
 program manipulation

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (294.34 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 38, Downloa


We present a framework for code generation that allows programs to m
 level while the joining and splicing of executable code is carried out aut
 The framework introduces ...

Keywords: domain specific language, generative programming, metap
 program generation, program transformation, reflection


Also published in:

October 2003 **SIGPLAN Notices** Volume 38 Issue 10

19 Techniques for obtaining high performance in Java programs

 Ifat H. Kazi, Howard H. Chen, Berdenia Stanley, David J. Lilja
September 2000 **Computing Surveys (CSUR)**, Volume 32 Issue 3

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (816.13 KB)


Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 77, Downloads (12 Months): 487, Downloads


This survey describes research directions in techniques to improve the performance of the Java programming language. The standard technique for Java execution is in the form of portable bytecodes. The portability of programs. ...

Keywords: Java, Java virtual machine, bytecode-to-source translators, interpreters, just-in-time compilers

20 SciSim: a software performance estimation framework using source code

 Zhonglei Wang, Antonio Sanchez, Andreas Herkersdorf
June 2008 **WOSP '08: Proceedings of the 7th international workshop on**

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (1.18 MB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 93, Downloads

Recently, software performance estimation based on source code instrumentation has become a popular research literature. It achieves significant speedup without compromising accuracy. However, much work still ...

Keywords: debugging information, microarchitecture, software performance, instrumentation

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